Title page

Short questions

Pathogenesis

The case study indicates that Mr Kirkman is a 78-years old man who was presented to the emergency department for experiencing a burning sensation and lower abdominal pain. The short assessment of the patient depicts that he developed urinary tract infection. He was kept under IV NaCl and IV Sulfamethoxazole-trimethoprim10 mg/kg/day. The patient was administered the dose twice every day.

Antibiotic therapy is used for treating the patient because it provides an immediate reaction to the disease. The dose is provided for antimicrobial resistance to the patient. It also prevents the development of uropathogenic bacteria that have the capacity of complicating therapeutic decisions based on biological investigations (McLellan & Hunstad, 2016). The uropathogenic bacteria that the patient can develop include E-Coli. It has also affected the bladder tissue. Oral antibiotic therapy is adapted for responding to the infection. The bladder creates a hostile environment that affects the urinary microbiome and symptomatic urinary tract conditions. The assessment depicts RR 35bpm, accessory muscle use.SPO2 82%, in obvious distress. Other observations reveal; Sinus rhythm 135bpm, Blood pressure 80/42mmHg, Temperature 39°C.

Examination of the patient after twenty-four hours depicts that the condition deteriorates and the patient looks unwell. This exhibits the seriousness of the situation. The clinical symptoms that confirm the seriousness of infection include frequent urination, nocturia and pain in the abdomen. Fever, chills, vomiting and back pain are also possible causes of infection. Clinical findings state that “Uropathogenic bacteria, derived from a subset of faecal flora, have traits that enable adherence, growth, and resistance of host defences" (Brusch & Bronze, 2019). The analysis of the patient’s condition depicts that the adhesins and bacterial surface structure cause attachment to the host membrane. The assessment after 24 hours reflect that the patient experience UTI with severe sepsis. It is critical to identify how bacteria can affect other organs of the body including bladder, kidney and urethra. The thorough examination of the condition exhibits that the patient experience pain during urination. Possible symptoms include frequent urination and leakage. Blood in urine or cloudy urine with strong odour also exhibits the seriousness. As Kirkman is an older patient he requires a more immediate response. Sepsis if remains untreated will cause disability or even kill the patient. The possible risks faced by the patient include the development of sepsis septic shock.

The treatment required for addressing the illness includes antibiotics and medications. The patient is required to consume a lot of fluids that improve the urinary tract condition. However, in the case of serve symptoms, it is not possible to treat UTI with medications alone. Antibiotics are used for removing the bacteria that has caused UTI and can further deteriorate the track. If the condition is not improved and patient experience septic shock the doctors will provide oxygen. In complex cases, surgery is performed for eliminating the risks. Vasopressors are also used for constricting blood vessels and increasing the blood pressures that prevent organs from shutting down (Liang, 2016). The common antibiotics suggested for the patient include nitrofurantoin, Macrobid and trimethoprim. These are effective in controlling the infection and reducing fever.

Nursing strategy

An appropriate nursing strategy required for dealing with Mr Kirkman includes pain assessment and management strategy for elderly patients. As Kirkman is an older patient having the age of 75 years, the nurses need to adopt a patient-centered therapy that assists him in the process of recovery. Inadequate pain management will create further complications and increase risks of septic shock. The nurses will record the conditions of the patient including verbal and non-verbal responses. The nurses will start with a physical examination that includes checking the vital signs. They will also check the condition of the abdomen by pressing with hands. The examination is also conducted by viewing the bladder sides and back. A clear examination of genitals is also required for making accurate observations. The nurses will acquire adequate information about the medical history of patients. UTI's condition during the past and the use of medications is considered before choosing the treatment. Nurses must be well skilled and acquire experience for performing laboratory tests (Aitken, Williams, Maurene, & Blot, 2011). They will examine the condition and evaluate if the pus is present. The urine sample is obtained and examined after 24 hours of treatment (Brusch & Bronze, 2019). The adoption of care model is appropriate because it allows nurses to improve the quality of patient's life. Early identification and treatment are appropriate for enhancing the chances of recovery for the patient.

The nurses will adopt a care model that focuses on providing instructions of self-care to the older patient. They will provide guidance on following adequate methods of hygiene that will prevent the infection of the urinary tract from getting worst (Doble, 2017). The nurses will provide essential hygiene guidelines such as washing hands before and after using the toilet, drinking lots of water, proper washing and using wipes. Some additional instructions that are essential for preventing complications of the urinary tract such as taking medications on time and avoid eating spicy food (McLellan & Hunstad, 2016). The strategy focuses on providing prevention recommendations to the patient that will eliminate the threats for developing respiratory related complications. The guidelines provided by the nurse will allow the patient to control the source of infection and transmission-based precautions. This minimizes the risks of strengthening the growth of bacteria. Resuscitation measures are also adopted by the nurse for ensuring maximization of health and welfare. They also provide instructions on the use of medications such as antibiotics, steroids, inotropes, vasopressors and sedation (White, Vazquez-Sandoval, Quiroga, Song, Jones, & Arroliga, 2018). The nurses must avoid errors that can lead to poor clinical outcomes and affect the health of the patient.

Analysis of results

The acid-base status is evaluated for assessing the condition of blood gases and its impacts on the condition of the patient. The results of arterial blood gas depict that the PH is below normal recorded as 7.25. The PaO2 is also below normal range because the observations are recorded as 75 mmHg. The normal range required for the healthy patient is 80-100 mmHg. PaCO2 is recorded as 32 mmHg that is below the normal range of 35-45 mmHg. The gap is also recorded in HCO3 that required to be at the normal range of 22-32 mmHg. BE is also recorded as -6mmol/L. the normal range required for BE is between -2 to +2 mmol/L. excessive lactate is reported as the data reveals 3.2 mmol/L that compared to the normal range of 0.3- 0.8 mmol/L.

The assessment of the arterial blood gas results with relevance to the pathogenesis of the patient's medical condition depicts the need for adopting adequate measures. The condition of the patient has not improved yet and he faces risks of septic shocks (White, Vazquez-Sandoval, Quiroga, Song, Jones, & Arroliga, 2018). The ABG data is collected during the first 48 hours of the patient's admission to the ED. The comparisons depict the presence of strong modalities in PH, PaCO2, BE and HCO3. These provide negative interpretation depicting the need for adopting medications and interventions. The findings confirm a correlation between PH, PaCO2, BE and HCO3 and the UTI septic infection.

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